A Study of Certain Interests of Seventh Grade Junior High School Pupils of Kansas City, Missouri

by

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Chapter I

Introduction.

As a teacher in one of the junior high schools of Kansas City, Missouri, the writer wished to ascertain whether the likes and dislikes of the pupils for school subjects were reflected in their school marks, and to discern to what extent the mental ability of the pupils was reflected in these likes and dislikes.

No material bearing directly upon this subject was to be found, therefore the writer attempted to secure pertinent data indirectly related to these problems. The writings of such men as Thorndike and Dewey gave the writer much help and valuable suggestions.

> Gates, following Thorndike, states, "The individual tends to repeat and learn quickly those reactions which are accompanied or followed by a satisfying state of affairs. The individual tends not to repeat or learn quickly those reactions which are accompanied or followed by an annoying state of affairs. These statements constitute the Law of Effect."[1]

The influence of the satisfying or annoying state of affairs is to determine selection of subject matter. When the individual is annoyed by reaction, he tends to

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1. Gates, Arthur I., "Psychology for Students of Education." Pp 230.

avoid it in future activity, and consequently does not acquire the reaction.

Thorndike, in his pioneer work on animal learning, was led to allot far-reaching effects to satisfaction and annoyance. These hypotheses are contained in the following,

> "When a modifiable connection between a situation and a response is made and is accompanied or followed by a satisfying state of affairs, its strength is increased; when made and accompanied or followed by an annoying state of affairs; its strength is decreased." [2]

There appears to be little doubt about the validity and necessity of the generalization stated above; namely, that individuals tend to repeat and learn quickly those reactions which are accompanied or followed by satisfaction; and they tend not to repeat those reactions which are accompanied or followed by annoying states of affairs. The effect of a reaction thus seems to determine the amount of learning which takes place.*

The Law of Effect may be exemplified by an example from Gates. Suppose a child is very self-assertive and boastful and the mother after each outbreak compels him to sit quietly and silently for five minutes. Soon the child ceases being boastful and makes cautious remarks (perhaps because of this punishment). With no outbreaks, of course there is no punishment and as time goes on, the holding

2. Ibid.; Pp 232.

* These hypotheses have been sharply criticised by the Gestalt group of psychologists.

in of the impulse to boast becomes annoying, which steadily weakens the acquired reaction until finally the old reaction breaks out again. One cure is further punishment, but another method is possible also.

> "If the child had been greatly satisfied by praise or some other reward whenever it refrained from unseemly self-assertion, the more modest reaction would have been gradually built up through exercise and effect where exercise alone might have failed. Here then is the essence of eliminating undesirable tendencies; start the desirable substitute reaction somehow, by punishment if necessary, but build it up by making it satisfying."3

> "As a corollary to the Law of Effect, we have the fact that the strengthening effect of satisfyingness varies with its intimacy with the bond in question as well as with the degree of satisfyingness. Suppose a teacher asks a small boy, how much is 7 x 6. Suppose the boy does not know but guesses in succession 35, 45, and 42. Here 35 and 45 were failures, as the teacher and other pupils made clear, but 42 being right succeeded. According to this law, 35 and 45 being failures brought annoyance and accordingly the next time a call comes for 7 x 6, the response is because of this failure less likely to be 35 or 45, and similarly because 42 was successful and brought satisfaction this response is next time more likely to come than on a former occasion."4

Although disagreement exists regarding the Law of Effect, there is general recognition of the importance of the interest factor in teaching and learning.

> Thorndike says, "Interests are also shown to be symptomatic, to a very great extent, of present and future capacity or ability. Either because one likes what he can do well, or because one gives zeal and effort to what he likes, or because interest and ability are both symptoms of some fundamen-

3. Ibid.; Pp234.
4. Kilpatrick, William Heard, Source Book in the Philosophy of Education; Pp 315.

tal feature of the individual's original nature, or because of the combined action of all three of these factors, interest and ability are bound very closely together. The bond is so close that either may be used as a symbol of the other as for itself."5

"By good teaching, we here mean that provision of school experience wherein the child is wholeheartedly active in acquiring the ideas and skills needed to deal with the problems of his expanding life.....

'Somehow our teaching has not attracted children to the school and its work. Too many children leave school as soon as the law allows. Too many pupils, still within the compulsory attendance age, are retarded one, two or more grades. Too many of the able and willing of mind are only half-engrossed with their school tasks.....'

'The pressure of poverty does not seem to be so great an influence on the elimination of pupils as that attitude of child and parent which doubts the worth of future schooling. And we find that many children whom we have considered backward or perverse, are merely bored by the unappealing tasks and formalities of school life.....'

We can have compulsory physical attendance at school, but education comes only through willing attention to and participation in school activities."6

"The genuine principle of interest is the principle of the recognized identity of the fact to be learned or the action proposed with the growing self; that lies in the direction of the agent's own growth, and is therefore, imperiously demanded, if the agent is to be himself.

'Let this condition of identification once be secured, and we have neither to appeal to sheer strength of will, nor to occupy ourselves with making things interesting."7

"Genuine interest is the accompaniment of the identification, through action of the self with some object

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5. Thorndike, E. L., Popular Science Monthly, LXXXI, Pp 456.
6. Dewey, John, Interest and Effort in Education. Introduction Ppv-ix.
7. Ibid., Pp 7.

> or idea, because of the necessity of that object or idea for the maintenance of a self-initiated activity. Effort, in the sense in which it may be opposed to interest, implies a separation between the self and the fact to be mastered or task to be performed and sets up a habitual division of activities. Externally, we have mechanical habits with no mental end or value. Internally, we have random energy or mind-wandering, a sequence of ideas with no end at all, because they are not brought to a focus in action. Interest, in the sense in which it is opposed to effort, means simply an excitation of the sense organ to give pleasure, resulting in strain on one side and listlessness on the other."[8]

If the foregoing quotations be true, correlation should exist between grades received in a school subject and liking by the pupil for such subject. This study seeks to ascertain whether this condition exists.

In March, 1928, a questionnaire from the superintendent's office was filled out by all high school pupils in Kansas City Missouri. This questionnaire sought to obtain numerous types of information. The writer secured answers to the following questions:

1. What high school subject do you like best_____
   Why_____
2. What high School subject do you like least_____
   Why_____
3. What solid subject do you study most_____
4. What solid subject do you study least_____

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8. Ibid., Pp 14

These data were secured during home room period under the direction of the home room sponsors. The pupils were told, before answering the questions, that the results would be held in strictest confidence and that teachers were not to know what had been written. Since the home room sponsors did not check the cards when they were handed in, complete returns were not obtained for all questions.

As soon as the cards were collected by the sponsors, they were sent to the school offices and then forwarded to the superintendent's office.

From these thousands of cards, only those of seventh grade pupils were selected for this study. A total of 685 boys and 601 girls was used in this study. This number probably presented a fairly accurate picture of the general status of seventh grade pupils attending the junior high schools of Kansas City, Missouri. Only a limited number of all seventh grade pupils in Kansas City, Missouri are in junior high schools. This questionnaire was not filled out by the seventh grade pupils in elementary schools and a complete selection of seventh grade pupils therefore was not secured.

After recording the questionnaire information, the writer visited each of the four junior high schools: Central, Westport, Northeast and West. Here from office records, the teachers' marks and intelligence ratings of these pupils were

secured and tabulated.

The writer feels that the pupils of these four junior high schools present a fairly reliable cross section of the seventh grade pupils of Kansas City, Missouri. Northeast contains children from homes in the Northeast and East Industrial Districts. Some of the homes are prosperous and provide a splendid home environment for the children; others are poverty stricken and can do little for their children. A few foreign children are enrolled in this school. (By foreign children, the writer means that the children or their parents were born in a foreign country.)

West contains children from the Central Industrial District. This district includes the Packing House, The Stockyards, and the Railroad Industries. The pupulation is largely foreign.

Central (in the Central-eastern part of the city) enrolls children from typical Kansas City apartment houses and moderately priced homes.

Westport (farther to the South and West) draws children from the wealthy Country Club District. Pupils in this school, in many cases, come from expensive apartments or attractive homes.

A study of the results from these four widely disparate groups appears to present a fairly representative sampling of pupils of the seventh grade in Kansas City, Missouri.

Chapter II

Problems Defined.

This study seeks:

1. (a) To find the five subjects liked best by 1286 seventh grade junior high school pupils and to discern the five most frequently reported reasons for the preferences. Then data will be assembled by sex. (There are 685 boys and 601 girls).

   (b) To find the five subjects liked least by the same pupils and to discern the five most frequently reported reasons for dislikes. These data will be assembled by sex.

2. (a) To determine the average grade made by each pupil in all of his junior high school subjects and to discern whether the grade made by each pupil in his best-liked subject was superior or inferior to his average grade. The data were secured for one semester only.

   (b) To determine whether the grade made by each pupil in his least-liked subject was superior or inferior to his average grade. The data were for one semester only. These data for (a) and (b) will be assembled by sex.

3. (a) To determine the frequency with which the best-liked and the least-liked solid subject was studied most or studied least. Solid subject means: arithmetic, history or grammar. They are the only subjects for which study is required outside of class.

   (b) To determine the frequency with which each solid subject is reported as the subject studied most and studied least. The data for (a) and (b) will assembled by sex.

4. To determine the average mental indices of the children in each group discussed in (1), (2) and (3). Mental ability was measured by the National Intelligence Test, Scale A, Form II. The pupils were given the following order of merit rank according to score:

Rank	Score
1.	0-9
2.	10-24
3.	25-74
4.	75-89
5.	90-100

The numerical ratings were assigned by the school and are based upon age percentile ranks of the National Intelligence Test Standards. 0-9 indicates the lowest ten per cent of the seventh grade pupils in the public schools of Kansas City, Missouri. 10-24 points the 10- 24 percentiles of Kansas City, Missouri seventh grade children, etc.

Presentation of Data.

The data of this study are assembled in forty-six tables. These tables together with accompanying explanations and comments make up the material of this chapter.

In Table I are listed by schools, and by the pupils collectively, the five best liked subjects. The five subjects liked best by all pupils are: gymnasium, arithmetic, history, grammar and shop work in the order named. A few interesting items stand out. While gymnasium in the total number of cases was ten per cent ahead of any other subject in favor; yet, in two schools arithmetic was more popular. Shop, which is taken only by boys, was uniformly in last place. It therefore appears to be a very popular type of work. The total number of choices of each solid subject was practically the same, but considerable variation occurred in arithmetic and grammar among the schools. Grammar was more than twice as popular at Central as was arithmetic; and at West, arithmetic was almost three times as popular as grammar. At Westport, the three solid subjects are: grammar, history and arithmetic.

In Table II one finds the best liked subjects listed according to sex. Since girls do not take shop work, six subjects are listed in order to give the five most popular subjects among the girls. Ranked according to the choice of the boys, the most popular subjects were: gymnasium, history, arithmetic, shop and grammar. Gymnasium was ten per cent more popular than was history. Shop and arithmetic followed history rather closely; but grammar was although

fifth in pupularity rank, very much less popular than the other subjects. The choice of the girls ranked in order were: grammar, arithmetic, gymnasium, history, and music. Grammar held first place by a considerable margin. Gymnasium, which was very pupular with the boys, dropped to third place with the girls. History was fourth on the girls' list. Music had last place on both lists and apparently was the favorite of few pupils.

TABLE I

The Five Subjects Liked Best by 1034 Kansas City Children
(Data are assembled by schools)

	Central			Westport			Northeast			West			Total		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Gym	92	1	27.0	109	1	32.5	47	2	26.8	53	2	28.9	301	1	29.1
Arith	44	4	12.9	62	3	18.6	52	1	30.0	55	1	29.9	213	2	20.6
Hist	77	3	22.0	62	3	18.6	33	3	18.8	38	3	20.6	210	3	20.3
Gram	91	2	26.8	62	3	18.6	28	4	16.0	19	4.5	10.3	200	4	19.3
Shop	37	5	11.3	39	5	11.7	15	5	8.4	19	4.5	10.3	110	5	10.7
Total	341			334			175			184			1034		

TABLE II

The Six Subjects Liked Best
(Data are assembled by sex)

	BOYS			GIRLS			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%
Gym	197	1	30.7	104	3	22.1	301	1	27.0
Arith	102	4	16.0	111	2	23.6	213	2	19.1
Hist	135	2	21.1	75	4	16.0	210	3	18.9
Gram	57	5	8.9	143	1	30.0	200	4	18.0
Shop	120	3	18.7	0			120	5	10.8
Music	30	6	4.6	39	5	8.3	69	6	6.2
Total	641			472			1113		

In Table III one finds the five reasons which appear most freqently for the liking of a subject. They are listed by schools. Almost all of the reasons given could be grouped under five heads although some individual pupils stated them in different words. The reason, "I like it", was given most frequently in each school, and in the total number of cases was given more than fifty per cent of the time. Central and Westport foblowed exactly the same order as did the total; and since they had about two-thirds of all the cases, they influenced greatly the total. Northeast placed usefulness second and success fourth. At West, in all except seven cases the pupils reported why they liked a subject.

TABLE III

The Five Reasons Given Most Frequently for Subject Preference
(Data are assembled by schools)

	CENTRAL			WESTPORT			NORTHEAST			WEST			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I like it	212	1	53.4	238	1	59.3	98	1	48.6	88	1	37.7	636	1	51.5
I can succeed in it	59	2	14.9	62	2	15.5	22	4	10.9	64	2	27.5	207	2	16.8
It is useful	56	3	14.1	41	3	10.2	36	2	17.8	54	3	23.2	187	3	15.1
I don't know	40	4	10.0	34	4	8.5	33	3	16.3	7	5	3.0	114	4	9.3
I like the teacher	30	5	7.6	26	5	6.5	13	5	6.4	20	4	8.6	89	5	7.3
total	397			401			202			233			1233		

In Table IV one finds interesting differences between the sexes. Boys rated usefulness ahead of success in the subject, while girls by a decided vote, reversed that order. Boys placed liking for the teacher in fifth place, while girls put a liking for the teacher ahead of not knowing why they like a subject. Boys gave "I like it" in almost half of the cases as the reason for liking a subject and girls gave it in more than half of the cases.

On the questionnaire a space was provided in which the child was asked to write out why he liked his favorite subject, and another blank was provided for writing the reason for his dislike of the least-liked subject. No suggestive list of reasons was provided from which he might select. Many children simply wrote in "I like it" or"I don't like it" which for the writer's purpose are not accurate reasons. These responses indicate that the pupil either did not know or that he did not reflect long enough regarding his reason. Another possiblity is this. Children talk about liking and disliking teacher and of liking or disliking subjects because of the teacher. However comparatively few children gave their attitude toward the teacher as the reason for liking or disliking subjects. Perhaps children feared to put the real reasons into writing, especially as in many cases, the teacher who collected their cards, was one of their teachers.

TABLE IV

The Five Reasons Given Most Frequently for Subject Preference
(Data are assembled by sex)

	BOYS cases	rank	%	GIRLS cases	rank	%	TOTAL cases	rank	%
I like it	321	1	48.6	315	1	55.0	636	1	51.5
I can succeed in it	116	3	17.6	91	2	15.8	207	2	16.8
It is useful	125	2	19.0	62	3	10.8	187	3	15.1
I don't know	66	4	10.0	48	5	8.4	114	4	9.3
I like the teacher	32	5	4.8	57	4	10.0	89	5	7.3
Total	660			573			1233		

The group of subjects which are least liked by the pupils are next studied.

In Table V the five least popular subjects are listed by schools. They are: history, grammar, arithmetic, art and music. Almost one-third of all pupils gave history as their least liked subject. In Northeast, grammar was however almost thirteen per cent more unpopular than was history, and in Central arithmetic was least liked. Eighty-three per cent of the total number of cases gave one of the following solid subjects, arithmetic, history or grammar as the least-liked subject. Students at West disliked art more than they did arithmetic.

From Table VI several differences are conspicuous in the responses of the boys and girls. The following were the disliked subjects among the boys: grammar, history, arithmetic, art and music. With the girls, this order was found: history, arithmetic, grammar, art, and music. The girls disliked history the most in 40 per cent of the cases, while in 36 per cent the cases, the boys gave grammar as their most disliked subject. With the boys, history and arithmetic were about equally disliked. Only 16 per cent of the girls gave grammar as their most disliked subject.

The three solid subjects, arithmetic, history, and grammar, are in both the lists of best-liked subjects and of least-liked subjects but they appear with a considerably larger vote as disliked subjects than as best-liked subjects.

Sex differences are not so pronounced as would appear at first; the same list of five subjects are the five least-liked subjects among the boys and among the girls. If we exclude shop (which is not studied by girls), boys and girls have the same list of best-liked subjects.

TABLE V

The Five Subjects Liked Least by 1049 Kansas City Children

(Data are assembled by schools)

	CENTRAL			WESTPORT			NORTHEAST			WEST			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	90	2	28.6	121	1	37.3	51	2	27.2	58	1	26.4	320	1	30.5
Gram	69	3	21.9	85	2	26.2	76	1	40.6	55	2	25.0	285	2	27.2
Arith	108	1	34.3	83	3	25.5	37	3	20.0	38	4	17.0	266	3	25.4
Art	28	4	8.6	18	5	5.5	16	4	8.2	50	3	22.8	112	4	10.7
Music	21	5	6.6	18	4	5.5	8	5	4.0	19	5	8.8	66	5	6.2
Total	316			325			188			220			1049		

TABLE VI

The Five Subjects Liked Least
(Data are assembled by sex)

	BOYS			GIRLS			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%
History	129	2	22.5	191	1	40.2	320	1	30.5
Grammar	209	1	36.4	76	3	16.0	285	2	27.2
Arithmetic	127	3	22.1	139	2	29.2	266	3	25.4
Art	63	4	11.0	49	4	10.3	112	4	10.6
Music	46	5	8.0	20	5	4.3	66	5	6.3
Total	574			475			1049		

In Table VII the reasons for these dislikes of subjects are presented by schools. There is marked agreement in the four schools. In every case the order of ranking is the same except for Northeast where "I don't know" was given more frequently than was "I don't like it". The percentages are quite uniform among the schools except in the case of West; here about 57 per cent of the cases gave "I can't succeed" as the cause for dislike of a subject. Dislike for the teacher however played a small part in the dislike for a subject.

In Table VIII complete uniformity of ranking was found between the sexes. They disliked subjects for the same reasons and in approximately the same degree since the percentages were strikingly similar.

It will be noted that the reasons for liking a subject and the reasons for disliking a subject were similar. The writer found "I like it" as the most common reason for liking a subject. He found its opposite "I don't like it" among the reasons for not liking a subject although in second place. It was disappointing to find so many pupils giving these indefinite statements. About 52 per cent gave theformer statement and almost 32 percent gave the latter. Over nine per cent gave "I don't know" as the reason for liking a subject and 19 per cent gave it as the reason for not liking a subject. Since the statements "I don't like it"

and "I like it" probably mean "I don't know", the general ranking of the statement "I don't know" in reality was increased in all of the tables dealing with these reasons.

Apparently junior high school seventh grade pupils have strong subject likes and dislikes without conscious reasons for them.

TABLE VII

The Five Reasons Given Most Frequently for the Dislike of a Subject
(Data are assembled by schools)

	CENTRAL			WESTPORT			NORTHEAST			WEST			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I can't succeed in it	128	1	37.7	140	1	37.5	63	1	32.6	119	1	56.9	450	1	40.4
I don't like it	119	2	35.0	131	2	35.2	46	3	23.8	58	2	27.8	354	2	31.8
I don't know	64	3	18.8	82	3	22.0	53	2	27.6	14	3	6.6	213	3	19.1
I don't like the teacher	19	4	5.6	20	4	5.3	27	4	14.0	10.04		4.8	76	4	6.8
It is not useful	10	5	2.9	0	5	0	4	5	2.0	8	5	3.9	22	5	1.9
Total	340			373			193			209			1115		

TABLE VIII

The Five Reasons Given Most Frequently for the Dislike of a Subject
(Data are assembled by sex)

	BOYS cases	rank	%	GIRLS cases	rank	%	TOTAL cases	rank	%
I can't succeed in it	242	1	41.2	208	1	39.5	450	1	40.4
I don't like it	176	2	30.0	178	2	33.7	354	2	31.8
I don't know	112	3	19.0	101	3	19.2	213	3	19.1
I don't like the teacher	45	4	7.6	31	4	5.9	76	4	6.8
It is not useful	13	5	2.2	9	5	1.7	22	5	1.9
Total	588			527			1115		

The writer believed that he would find a pupil receiving a higher grade in his best-liked subject than his average grade. Likewise, he expected to find lower than average grades received for least-liked subjects.

Table IX presents data about grades received in best-liked subjects. These data show that 58.6 per cent of the boys and 61 per cent of the girls received grades in their best-liked subjects which were above their average grades. Twenty-four and six-tenths per cent of the boys and 21.5 per cent of the girls received grades in their best-liked subjects which were the same as their average grades. Therefore 83.2 per cent of the boys and 82.5 per cent of the girls had average grades or better than average grades in their best-liked subjects.

Table X presents similar data for the least-liked subjects. Almost 65 per cent of the boys and over 69 per cent of the girls received grades in their least-liked subject that were below their average grades. Only about twelve per cent of the boys and eleven per cent of the girls received grades above their average.

It seems therefore to be apparent that liking for a subject is one potent factor in determining the grade received. There are of course numerous other reasons for the distribution of grades. The conspicuously high graded received in best-liked subjects and the strikingly low ones received in least-liked ones

tend to support the hypothesis stated in the Law of Effect. Liking for a subject apparently has a salutary effect upon the grade; dislike an undesirable effect. This condition exists in spite of the fact that the pupils can give no precise reasons for their likes and dislikes.

TABLE IX

A Comparison of the Teachers' Marks, Received by Pupils, in Their Best Liked Subjects with Their Average Grade (Data are assembled by sex)

	BOYS cases	rank	%	GIRLS cases	rank	%	TOTAL cases	rank	%
No. of times grade is above pupil's average	384	1	59.5	355	1	61.0	739	1	60.2
No. of times grade is below pupil's average	102	3	15.9	102	3	17.5	204	3	16.6
No. of times grade is same as pupil's average	159	2	24.6	125	2	21.5	284	2	23.2
Total	645			582			1227		

TABLE X.

A comparison of the Teachers' Marks, Received by Pupils, in Their Least Liked Subjects with their Average Grades

(Data are assembled by sex)

	BOYS			GIRLS			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%
No. of times grade is above pupil's average	74	3	12.2	60	3	10.7	134	3	11.5
No. of times grade is below pupil's average	392	1	64.8	389	1	69.1	781	1	66.9
No. of times a grade is same as pupil' ave.	139	2	23.0	114	2	20.2	253	2	21.6
Total	605			563			1168		

The writer anticipated that the best-liked solid subject would be studied most and the least-liked solid subject studied least. No attention could be directed to best liked non-solid subjects or least-liked non-solid subjects, as such subjects are not studied outside of the classroom. There are only three solid subjects studied by seventh grade pupils. Examples of non-solid subjects are: gymnasium, music and art.

Table XI and Table XII show clearly that the children tended to study most the subject liked best and to study least the subject liked least. About 70 per cent of the boys studied most their best-liked solid subject, while about 65 per cent of the girls did the same. About 63 per cent of the boys and about 65 per cent of the girls studied least their least-liked subject.

The foregoing lends support to Dewey's idea of the interest factor. Apparently interest determines the direction of our effort and the choice of leisure activity. Interest is (as has been stated previously) an elusive element. It appears to be a factor of considerable importance in determining the grades made in subjects and the time spent in study.

TABLE XI

A Comparison of the Frequency with which the Best Liked Solid Subject is Studied Most or Studied Least of all the Solid Subjects.

(Data are assembled by sex)

	BOYS cases	rank	%	GIRLS cases	rank	%	TOTAL cases	rank	%
Best Liked Solid Subject is Studied Most	150	1	70.1	150	1	65.2	300	1	67.4
Best Liked Solid Subject is Studied Least	64	2	29.9	80	2	34.8	144	2	32.6
Total	214			230			444		

TABLE XII

A Comparison of the Frequency with which the Least Liked Solid Subject is Studied Most or Studied Least of all the Solid Subjects

(Data are assembled by sex)

	BOYS cases	rank	%	GIRLS cases	rank	%	TOTAL cases	rank	%
Least Liked Solid Subject is S Studied Most	106	2	37.1	84	2	34.4	190	2	35.9
Least Liked Solid Subject is Studied Most	180	1	62.9	160	1	65.6	340	1	64.1
Total	286			244			530		

Table XIII presents the data, by schools, as to which solid subject was studied most. Arithmetic was studied most at Northeast and West, while grammar was first at Central and Westport. History held second place at Central, Northeast and West with arithmetic in second place at Westport.

In examining the total figures one discovers that time was devoted to subjects according to the following order: arithmetic, grammar and history. No large differences are to be noted in the percentages although conspicuous ones existed in individual schools, notably Northeast and West.

From the comments written by pupils on the questionnaires, dislike of teachers was an important cause of the above differences among the four schools.

In Table XIV data are presented according to sex. Both boys and girls studied arithmetic the most and history the least. Grammar in middle place had almost exactly the same percentages with both boys and girls. All seventh grade pupils are required to enroll for these three solid subjects.

TABLE XIII

A Comparison Among the Solid Subjects

Showing the Frequency with which

Each is the Most Studied Subject
(Data are assembled by schools)

	CENTRAL			WESTPORT			NORTHEAST			WEST			TOTAL		
	case	rank	%	case	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Arithmetic	96	3	24.0	131	2	32.3	128	1	59.6	137	1	61.2	492	1	39.5
Grammmar	156	1	39.0	180	1	44.3	40	3	18.6	26	3	11.6	402	2	32.3
History	148	2	37.0	95	3	23.4	47	2	21.8	61	2	27.2	351	3	28.2
Total	400			406			215			224			1245		

TABLE XIV

A Comparison Among the Solid Subjects

Showing the Frequency with which Each is the Most Studied Subject.

(Data are assembled by sex)

	BOYS			GIRLS			TOTAL		
	CASES	RANK	%	CASES	RANK	%	CASES	RANK	%
Arithmetic	280	1	42.1	212	1	36.5	492	1	39.5
Grammar	213	2	32.0	189	2	32.6	402	2	32.3
History	172	3	25.9	179	3	30.9	351	3	28.2
Total	665			580			1245		

In Table XV the three solid subjects are compared as to which is the least studied subject. The data are assembled by schools. Arithmetic was studied least at Central, history at Westport and Northeast, and grammar least at West. Fifty-four per cent of the pupils, at West gave grammar as their least studied solid subject. A much smaller percentage gave it as least studied at the other schools; as few as 21 per cent at Westport. The total, of all the schools, gave this order: history, grammar and arithmetic.

Written assignments are most common in arithmetic and least common in history. Therefore, one might expect the above order; since many students do only the minimum amount of work that will enable them to receive passing grades.

In Table XVI the data are presented by sex. The order of frequency was the same for boys and girls: history, grammar and arithmetic. The percentages assembled by sex were very similar.

Little conclusive speculation can follow from the data given above. One fact of importance is apparent. Time devoted to study and liking for the teacher are positively related.

The three solid subjects are studied by all seventh grade pupils. Therefore one might expect to find many pupils studying them under compulsion and a minimum amount of work might be done in these subjects.

Table XV

A Comparison Among the Solid Subjects

Showing the Frequency with which Each is the Least Studied Subject

(Data are assembled by schools)

	CENTRAL			WESTPORT			NORTHEAST			WEST			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	121	2	34.0	165	1	48.8	90	1	51.0	61	2	30.7	437	1	40.9
Gram	98	3	27.5	71	3	21.0	66	2	37.6	109	1	54.8	344	2	32.1
Arith	137	1	38.5	102	2	30.2	20	3	11.4	29	3	14.5	288	3	27.0
Total	356			338			176			199			1069		

TABLE XVI

A Comparison Among the Solid Subjects

Showing the Frequency with which Each is the Least Studied Subject

(Data are assembled by sex)

	BOYS			GIRLS			TOTAL		
	cases	rank	%	cases	rank	%	cases	rank	%
History	246	1	42.2	191	1	39.3	437	1	40.9
Grammar	189	2	32.4	155	2	31.9	344	2	32.1
Arithmetic	148	3	25.4	140	3	28.8	288	3	27.0
Total	583			486			1069		

In Tables XVII, XVIII and XIX data are presented to indicate the best-liked subjects, according to intelligence grouping.

In Table XVII the likes of the boys are presented. Here one found this order in popularity: gymnasium, history, shop, arithmetic, and grammar. The order of subjects was practically undhanged for each intelligence level. In the group of lowest intelligence, art ranked in fourth place. Grammar held fifth place in each of the four highest intelligance groups and occupied sixth place with the least intelligent group. Shop work which is usually thought of as a favorite with boys of rather low intelligence, ranked third with the most intelligent group, fourth with the second, second with the middle group, third with the fourth group and also third with the lowest group. These data did not indicate such favoritism.

It appears, therefore, that intelligence as measured by the National Intelligence Tests has little bearing upon the popularity of a subject. Other factors appear to be of much greater importance. Among these factors is liking for the teacher.

In Table XVIII are presented similar data for girls. The six best liked subjects in order were: grammar, arithmetic, gymnasium, history, music, and art. Art which ranked sixth in the composite ranking, ranked third in the most intelligent group. There was little change in the order

of subjects in any intelligence group except with the most intelligent group where arithmetic dropped to sixth instead of second or third, and history rose to second place from its customary fourth place. Grammar, history and art were the best liked subjects with the most intelligent girls. The dullest group also showed considerable variation from the composite ranking. Here gymnasium was in first place, grammar dropped from its customary first place and music ranked above history.

From these data it appears that arithmetic had a lower degree of popularity with the most intelligent quartile of the girls than with all of the others. Grammar had considerably less interest to the lowest ten per cent of the girls and gymnasium with them had first place. History, an abstract subject, grew steadily less popular as intelligence decreased.

In Table XIX one finds the fankings for both boys and girls combined. The order of pupularity was: gymnasium, arithmetic, history, grammar and shop. Arithmetic, history, and grammar vary little in popularity because differences between boys and girls as shown in Tables XVII and XVIII tended to balance one another. There was endless variety, as for example: arithmetic held fifth place with the most intelligent group, third place with the second group, second place with the middle group, first place with the fourth group, and with the lowest group again dropped to third place.

When the children were assembled into five groups, according to intelligence, little difference was found in the popularity of the three solid subjects with the exception of grammar in the lowest group. Here it ranked much below arithmetic and history. This is of importance for Dewey and others assert that a close relationship exists between language, knowledge, and thinking. It is possible, therefore, that the language arts have not been developed sufficiently to provide the students with adequate tools for thinking. A more salutary attitude toward the instruction in grammar might bring more desirable results in general academic attainment.

TABLE XVII

The Seven Best Liked Subjects

According to Intelligence Grouping (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Gym	27	1	31.0	45	1	33.8	92	1	27.7	15	1.5	25.0	18	1	34.6	197	1	29.7
Hist	20	2	23.0	31	2	23.3	57	4	17.1	15	1.5	25.0	12	2	23.1	135	2	20.3
Shop	18	3	20.7	17	4	12.8	65	2	19.6	12	3	20.0	8	3	15.4	120	3	18.1
Arith	8	4	9.2	23	3	17.3	58	3	17.4	9	4	15.0	4	5	7.7	102	4	15.4
Gram	6	5	6.8	12	5	9.0	31	5	9.4	5	5	8.3	3	6	5.8	57	5	8.6
Music	3	7	3.5	4	6	3.0	18	6	5.5	3	6	5.0	2	7	3.8	30	6	4.5
Art	5	6	5.8	1	7	.8	11	7	3.3	1	7	1.7	5	4	9.6	23	7	3.4
Total	87			133			332			60			52			664		

TABLE XVIII

The Six Best Liked Subjects

According to Intelligence Grouping
(Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			total		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Gram	21	1	32.3	30	1	27.8	68	1	27.9	18	1	32.7	6	3	16.2	143	1	28.2
Arith	6	6	9.2	22	3	20.3	57	2	23.5	16	2	29.1	10	2	27.0	111	2	21.9
Gym	8	4	12.3	26	2	24.1	51	3	21.0	8	3	14.5	11	1	29.7	104	3	20.4
Hist	13	2	20.0	19	4	17.6	34	4	14.0	5	4.5	9.1	4	5	10.8	75	4	14.7
Music	7	5	10.8	5	6	4.6	17	5	7.0	5	4.5	9.1	3	4	13.5	39	5	7.7
Art	10	3	15.4	6	5	5.6	16	6	6.6	3	6	5.5	1	6	2.8	36	6	7.1
Total	65			108			243			55			37			508		

TABLE XIX

The Five Best Liked Subjects

According to Intelligence Grouping (all pupils)

	90-100 percentile			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			total		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Gym	35	1	27.5	71	1	31.5	143	1	28.0	23	2.5	22.3	29	1	38.2	301	1	28.8
Arith	14	5	11.0	45	3	20.0	115	2	22.4	25	1	24.3	14	3	18.4	213	2	20.4
Hist	33	2	26.0	50	2	22.3	91	4	17.7	20	4	19.4	16	2	21.0	210	3	20.1
Gram	27	3	21.3	42	4	18.7	99	3	19.3	23	2.5	22.3	9	4	11.9	200	4	19.2
Shop	18	4	14.2	17	5	7.5	65	5	12.6	12	5	11.7	8	5	10.5	120	5	11.5
Total	127			225			513			103			76			1044		

Tables XX, XXI, and XXII deal with the reasons for liking a subject, and with the pupils grouped according to intelligence.

Table XX shows the following reasons among the boys for liking subjects: 1. I like it, 2. It is useful, 3. I can succeed in it, 4. I don't know, 5. I like the teacher. In every intelligence group, one finds a decided drop in per cent of choice from item 1 to item 2. One finds however a much smaller per cent who gave "Usefulness" in the fourth group, than in the other groups. "Success" outranked "usefulness" both in the highest and in the lowest groups.

In Table XXI similar data for girls show this order in frequency: 1. I like it, 2. I can succeed in it, 3. It is useful, 4. I like the teacher, 5. I don't know. It is of interest that girls place "I don't know" in last position. The per cent of pupils giving item 5 increases as intelligence decreases. The upper quartile in intelligence gave the indefinite statement, "I like it", more often than did the lowest quartile. Liking the teacher is relatively important with each intelligence group and much more so with the boys.

Data concerning the sexes combined appears in Table XXII. The order of frequency of the reasons for the entire group follows: 1. I like it, 2. I can succeed in it, 3. It is useful, 4. I don't know, 5. I like the teacher. This is unlike the order as shown by either the boys or girls,

treated separately. The indefinite statement "I like it" or its equivalent is given in a majority of the cases. The more intelligent students are the worst offenders in the use of this reason for liking a subject.

From the data given above there appears to be little relationship between intelligence and liking for a subject as expressed in the responses of the pupils. This is contrary to popular opinion and to certain studies. This condition may have been due to the nature of the questionnaire. It is assumed often that bright pupils are better able to discover the reasons for their attitudes.

Table XX

The Five Reasons Given Most Frequently

for Liking a Subject
According to Intelligence Grouping (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I like it	48	1	55.2	67	1	50.7	156	1	47.5	23	1	38.3	27	1	51.0	321	1	48.6
It is useful	14	3	16.1	23	2	17.4	69	2	21.0	13	2.5	21.7	6	3.5	11.3	125	2	19.0
I can succeed in it	18	2	20.7	21	3	15.9	50	3	15.5	13	2.5	21.7	14	2	26.4	116	3	17.6
I don't know	6	4	6.9	13	4	10.0	33	4	10.0	8	4	13.3	6	3.5	11.3	66	4	10.0
I like the teacher	1	5	1.1	8	5	6.0	20	5	6.0	3	5	5.0	0	5	0	32	5	4.8
Total	87			132			328			60			53			660		

Table XXI

The Five Reasons Given Most Frequently

for Liking a Subject
According to Intelligence Grouping (Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I like it	45	1	60.0	80	1	65.0	135	1	49.6	32	1	53.3	23	1	53.4	315	1	55.0
I can succeed in it	13	2	17.3	15	2.5	12.2	51	2	18.8	8	2.5	13.3	4	4	9.3	91	2	15.8
It is useful	6	4	8.0	15	2.5	12.2	27	5	10.0	7	4	11.7	7	2	16.3	62	3	10.8
I like the teacher	8	3	10.7	8	4	6.5	30	3	11.0	8	2.5	13.3	3	5	7.0	57	4	10.0
I don't know	3	5	4.0	5	5	4.1	29	4	10.6	5	5	8.4	6	3	14.0	48	5	8.4
Total	75			123			272			60			43			573		

Table XXII

The Five Reasons Given Most Frequently for Liking a Subject, According to Intelligence Grouping (all pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I like it	93	1	57.4	147	1	57.2	292	1	48.9	55	1	45.0	49	1	51.6	636	1	51.5
I can succeed in it	31	2	19.1	38	2.5	14.8	97	2	16.3	23	2	19.0	18	2	18.9	207	2	16.8
It is useful	20	3	12.3	38	2.5	14.8	96	3	16.0	20	3	16.4	13	3	13.7	187	3	15.2
I don't know	9	4.5	5.6	18	4	7.0	62	4	10.4	13	4	10.6	12	4	12.6	114	4	9.3
I like the teacher	9	4.5	5.6	16	5	6.2	50	5	8.4	11	5	9.0	3	5	3.2	89	5	7.2
Total	162			257			597			122			95			1233		

In Table XXIII one finds the data concerning the five most disliked subjects among the boys ranked according to intelligence ratings. They had this order for the entire group: grammar, history, arithmetic, art, and music. One is struck by the similarity in per cents of history and arithmetic in all groups, except the fourth where arithmetic was much more unpopular. Art was much more unpopular with the second group than with the other four groups. In each group and in the composite ranking grammar was much more unpopular than was any other subject but with varying per cents. There was only ten per cent of difference between Grammar and the next subject in the most intelligent group and only eight per cent in the great middle group. However the second group had a high percentage of unpopularity for grammar and about twenty-five per cent of difference between it and the next subject.

According to Table XXIV the girls had this order for unpopularity of subjects: history, arithmetic, grammar, art and music. The most intelligent group differed considerably from this composite result. With this group, arithmetic was the least-liked subject; history was next; art and grammar were in third place. No girl in the least intelligent group gave art or music as the least-liked subject. One definite trend was shown in this table; history was more and more disliked

as the intelligence drops. While 23.8 per cent dislike it in the highest group, the per cent increases as follows: 30.4, 43.5, 49.2.

In Table XXV the data from the two preceding tables are combined. For the entire group the order of least liked subjects are as follows: history, grammar, arithmetic, art, and music. This same order was followed by the two groups, lowest in intelligence. Arithmetic rose to first place with the highest ten per cent, but with the next fifteen per cent arithmetic held its third place and then rose to second place with the middle fifty per cent. Grammar rose to first place with the second group and dropped to third place with the middle group and was in second place with the best group and with the two lowest groups.

Drill subjects appear to be liked better by pupils of low intelligence rating than by pupils of high rating.

Table XXIII

The Five Least Liked Subjects

According to Intelligence Grouping (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Gram	21	1	34.4	44	1	41.1	97	1	33.6	23	1	41.8	20	1	41.7	209	1	36.4
Hist	18	2.5	24.0	18	2.5	16.8	74	2	25.6	8	3	14.6	11	2.5	22.9	129	2	22.5
Arith	18	2.5	24.0	16	4	15.0	69	3	23.8	13	2	23.6	11	2.5	22.9	127	3	22.1
Art	7	4.5	9.3	18	2.5	16.8	28	4	9.7	5	5	9.1	5	4	10.4	63	4	11.0
Music	7	4.5	9.3	11	5	10.3	21	5	7.3	6	4	10.8	1	5	2.1	46	5	8.0
Total	75			107			289			55			48			574		

Table XXIV

The Five Least Liked Subjects

According to Intelligence Grouping (Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	14	2.0	23.8	27	1	30.4	100	1	43.5	29	1	49.2	21	1.0	55.2	191	1	40.2
Arith	21	1	35.6	25	2	28.1	68	2	29.6	15	2	25.4	10	2.	26.3	139	2	29.2
Gram	10	3.5	16.9	15	4	16.9	34	3	14.8	10	3	16.9	7	3	18.5	76	3	16.0
Art	10	3.5	16.9	17	3	18.9	18	4	7.8	4	4	6.8	0	4.5	0.0	49	4	10.3
Music	4	5	6.8	5	5	5.7	10	5	4.3	1	5	1.7	0	4.5	0.0	20	5	4.3
Total	59			89			230			59			38			476		

Table XXV

The Five Least Liked Subjects,

According to Intelligence Grouping (All pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	32	3	24.0	45	2	22.9	174	1	33.5	37	1	32.5	32	1	37.2	320	1	30.5
Gram	35	2	26.1	59	1	30.0	131	3	25.2	33	2	29.0	27	2	31.4	285	2	27.1
Arith	39	1	29.0	41	3	20.9	137	2	26.4	28	3	24.5	21	3	24.4	266	3	25.4
Art	17	4	12.7	35	4	18.0	46	4	8.9	9	4	8.0	5	4	5.9	112	4	10.7
Music	11	5	7.2	16	5	8.2	31	5	6.0	7	5	6.0	1	5	1.1	66	5	6.3
Total	134			196			519			114			86			1049		

In Table XXVI the five reasons for disliking subjects are offered in their order of merit for the entire group of boys. Lack of success has second place with the most intelligent group; however, that reason was tied for first place in the second group and in the lowest group; in the remaining groups it held first place. "I don't know" was in third place in four groups and in second place in one. The smallest per cents giving this lack of a reason were in the two extremes: twelve per cent in the most intelligent group and fifteen per cent in the least intelligent group. Only one boy in the least intelligent group gave a dislike for the teacher as the cause for disliking a subject and in no group did as many as ten per cent use this reason. One might suppose that the least intelligent boys would question the utility of a subject; yet the data shows that no boy in the lowest quartile of intelligence gave this reason for disliking a subject and only one boy gave it in the highest group.

Similar data for the girls appear in Table XXVII. Exactly the same order was found here as was found among the boys. The same order was found in each group, but per centages varied. "I don't know" was give so much more often among the lowest quartile of intelligence. Dislike of the teacher had even a smaller place than did this reason among the boys. Lack of utility as a reason was given by only

nine out of a total of 527 girls and none of these appeared in either of the two lowest groups.

When the data for boys and girls are combined in Table XXVIII of course the same order of reasons was found since the order was the same with the sexes. There was little change from this order at any intelligence level. The Statement "I don't know" was used as a reason more and more as the intelligence decreased.

Apparently seventh grade children are not consciously aware of the reasons for their attitudes toward school work. This is true of children in general and holds for children of different intelligence levels. The children of highest intelligence are no better able to report the reasons for their attitudes than are the children of lowest intelligence. This may be due to faulty technique in securing the information. When the child was asked to fill in a blank with a reason he often was either not able to analyze his attitude or did not take time to do so. Another explanation is that sometimes the child may not have considered it advisable to give his real reasons. Then there may not be a sufficient range in intelligence to cause decided differences to appear among the five intelligence groups.

Table XXVI

The Five Reasons Given Most Frequently

for Not Liking a Subject,
According to Intelligence Grouping (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I can't succeed in it	28	2	33.8	41	1.5	35.9	131	1	45.0	23	1	42.6	19	1.5	41.3	242	1	41.2
I don't like it	36	1	43.3	41	1.5	35.9	68	2	23.4	12	3	22.2	19	1.5	41.3	176	2	30.0
I don't know	10	3	12.0	19	3	16.8	62	3	21.3	14	2	25.9	7	3	15.2	112	3	19.0
I don't like the teacher	8	4	9.7	8	4	7.0	23	4	7.9	5	4	9.3	1	4	2.2	45	4	7.6
It is not useful	1	5	1.2	5	5	4.4	7	5	2.4	0	5	0	0	5	0	13	5	2.2
Total	83			114			281			54			46			588		

Table XXVII

The Five Reasons Given most Frequently

for not Liking a Subject,
According to Intelligence Grouping (Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I can't succeed in it	24	1	38.7	48	1	43.3	99	1	39.6	23	1	37.7	14	1	32.6	208	1	39.5
I don't like it	22	2	35.5	40	2	36.0	88	2	35.2	15	3	24.6	13	2.5	30.2	178	2	33.7
I don't know	11	3	17.8	16	3	14.4	42	3	16.8	19	2	31.1	13	2.5	30.2	101	3	19.2
I don't like the teacher	4	4	6.4	5	4	4.5	15	4	6.0	4	4	6.6	3	4	7.0	31	4	5.9
It is not useful	1	5	1.6	2	5	1.8	6	5	2.4	0	5	0	0	5	0	9	5	1.7
Total	62			111			250			61			43			527		

Table XXVIII

The Five Reasons Given Most Frequently

for not Liking a Subject,

According to Intelligence Grouping (All pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
I can't succeed in it	53	2	36.3	87	1	39.0	230	1	42.6	46	1	40.0	34	1	37.8	450	1	40.4
I don't like it	58	1	39.9	81	2	36.1	156	2	29.0	27	3	23.5	32	2	35.6	354	2	31.7
I don't know	21	3	14.3	36	3	16.0	103	3	19.0	33	2	28.7	20	3	22.2	213	3	19.1
I don'tlike the teacher	12	4	8.2	13	4	5.8	38	4	7.0	9	4	7.8	4	4	4.4	76	4	6.9
It is not useful	2	5	1.3	7	5	3.1	13	5	2.4	0	5	0	0	0	0	22	5	1.9
Total	146			224			540			115			90			1115		

Table XXIX presents a comparison between the teachers' marks for boys' best-liked subjects and their average grades arranged according to intelligence grouping. Each intelligence group presented a majority of cases where the grade in the best-liked subject was above the average grade. The percentage constantly grew larger in each group from the most intelligent to the least intelligent. The per cents ranged from 53.5 to 66.8.

When one adds to the above percentages the per cents receiving grades in their best-liked subjects that were the same as their average grades he finds the range to be from 79.1 per cent to 86.9 per cent. The larger per cents are found among boys of lower intelligence. The writer assumes that liking a subject is a greater spur to a boy of low intelligence than to one of greater intellect.

Table XXX presents similar data for girls. Here also over 50 per cent of the cases in each intelligence group had grades in their best-like subjects that were above their average grades. The range was from 50.9 per cent to 68.3 per cent but was not regular in increase from one group to the next. The higher percentages were found in the more intelligent groups. About one-fifth of the girls had grades in their best-liked subjects that were the same as their average grades. The per cent of grades that were average or better than average are as follows, in order from the

most intelligent group of girls to the least intelligent group: 85.5, 87.0, 83.3, 71.2, 87.0. The writer cannot account for the lower percentage for the fourth group. There is little difference among the other groups and speculation only is warranted.

Table XXXI presents data on the subject as do Tables XXIX and Table XX, but presents them for boys and girls together. Results are of course similar, except that differences between the boys and girls tend to balance one-another; therefore, the range is smaller in percentages among the groups.

Table XXIX

A Comparison of the Teacher's Marks

Received by Pupils in Their Best Liked Subjects, with Their Average Grades

According to Intelligence Grouping (Boys)

No. of times grade is	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
above pupil's average	46	1	53.5	77	1	57.5	192	1	60.8	37	1	60.7	32	1	66.8	384	1	59.5
below pupil's average	18	3	20.9	23	3	17.1	45	3	14.2	8	3	13.1	8	2.5	16.6	102	3	15.9
same as pupil's average	22	2	25.6	34	2	25.4	79	2	25.0	16	2	26.2	8	2.5	16.6	159	2	24.6
Total	86			134			316			61			48			645		

Table XXX

A Comparison of the Teacher's Marks

Received by Pupils in Their Best Liked Subjects with Their Average Grades

According to Intelligence Grouping (Girls)

No. of times grade is	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
above pupil's average	51	1	67.1	84	1	68.3	161	1	59.9	30	1	50.9	29	1	65.0	355	1	61.0
below pupil's average	11	3	14.5	16	3	13.0	52	3	18.7	17	2	28.8	6	3	13.0	102	3	17.5
same as pupil's average	14	2	18.4	23	2	18.7	65	2	23.4	12	3	20.3	11	2	24.0	125	2	21.5
Total	76			123			278			59			46			582		

Table XXXI

A Comparison of the Teacher's Marks

Received by Pupils in Their Best Liked Subjects with Their Average Grades

According to Intelligence Grouping (All Pupils)

No. of times grade is	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
above pupil's average	97	1	59.9	161	1	62.6	353	1	59.4	67	1	55.9	61	1	64.9	739	1	60.2
below pupil's average	29	3	17.9	39	3	15.2	97	3	16.3	25	3	20.8	14	3	14.9	204	3	16.6
same as pupil's as pupil's average	36	2	22.2	57	2	22.2	144	2	24.3	28	2	23.3	19	2	20.2	284	2	23.2
Total	162			257			594			120			94			1227		

One would expect a pupil to receive lower grades in his least-liked subject than his average grade. Data are given separately for the five intelligence groups.

Table XXXII presents data for boys and Table XXXIII for girls. A majority of all cases in each group received for their least-liked subject a grade that was below their average grade. The percentage either remained constant or increased from the most intelligent group to the least intelligent group. In no case was there a decrease. This was true both for boys and for girls. The range of per cents was from 63.0 to 84 for girls and from 61.9 to 72.7 for boys. With each sex a small percentage received grades above their averages in their least-liked subjects. With the least intelligent groups the percentage was indeed small. It was only two per cent for the least intelligent group of girls and 4.6 per cent for the corresponding group of boys.

One may assume that as intelligence decreases the individual lacks progressively the driving power to do average or better work in his least-liked subject. This is true for both sexes.

Table XXXIV offers data for the entire group. Since the two preceding tables showed that the boys and girls were so much alike, the combination of their data revealed few changes.

Table XXXII

A Comparison of the Teacher's Marks

Received by Pupils in Their Least Liked Subjects with Their Average Grades

According to Intelligence Grouping (Boys)

No. of times grade is	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
above pupil's average	13	3	15.5	16	3	13.3	41	3	13.8	2	3	3.4	2	3	4.6	74	3	12.2
below pupil's average	52	1	61.9	77	1	64.2	191	1	64.1	40	1	67.8	32	1	72.7	392	1	64.8
same as pupil's average	19	2	22.6	27	2	22.5	66	2	22.1	17	2	28.8	10	2	22.7	139	2	23.0
Total	84			120			298			59			44			605		

Table XXXIII

A Comparison of the Teacher's Marks

Received by Pupils in Their Least Liked Subjects with their Average Grades

According to Intelligence Grouping. (Girls)

No. of times grade is	90-100 percentiles cases	rank	%	75-89 percentiles cases	rank	%	25-74 percentiles cases	rank	%	10-24 percentiles cases	rank	%	0-9 percentiles cases	rank	%	Total percentiles cases	rank	%
above pupil's average	11	3	16.0	22	3	17.3	21	3	8.1	5	3	8.5	1	3	2.0	60	3	10.7
below pupil's average	44	1	65.7	80	1	63.0	181	1	70.5	42	1	70.0	42	1	84.0	389	1	69.1
same as pupil's average	14	2	20.3	25	2	19.7	55	2	21.4	13	2	21.7	7	2	14.0	114	2	20.2
Total	69			127			257			60			50			563		

Table XXXIV
A Comparison of the Teacher's Marks

Received by Pupils in Their Least Liked Subjects with Their Average Grades

According to Intelligence Grouping (All Pupils)

No. of times grade is	90-100 percentiles cases	rank	%	75-89 percentiles cases	rank	%	25-74 percentiles cases	rank	%	10-24 percentiles cases	rank	%	0-9 percentiles cases	rank	%	Total percentiles cases	rank	%
above pupil's average	24	3	15.7	38	3	15.3	62	3	11.2	7	3	5.9	3	3	3.2	134	3	11.5
Below pupil's average	96	1	62.8	157	1	63.6	372	1	67.0	82	1	68.9	74	1	78.7	781	1	66.9
same as pupil's average	33	2	21.5	52	2	21.1	121	2	21.8	30	2	25.2	17	2	18.1	253	2	21.6
Total	153			247			555			119			94			1168		

Table XXXV presents data for boys only, grouped according to intelligence. In this table, one finds in each group that the best-liked solid subject was studied the most; differences were not always marked. In the three middle groups, very high majorities of from 68.8 per cent up to 80 per cent studied most their best-liked subject. In some of these groups, the number of cases was very small so a slight change greatly affected the percentage.

Table XXXVI is similar to Table XXXV except that it presents data for girls only. In the most intelligent group, a majority studied their best-liked solid subject less than any other subject; however in the four other groups, beginning with the more intelligent and ending with the least intelligent, the best-liked subject was studied more than any other subject. This tendency was in inverse relationship to intelligence. In the least intelligent group 84.6 per cent studied the best liked subject more than any other.

Table XXXV

A Comparison of the Frequency with which the Best Liked Solid Subject is Studied Most or Studied Least of All the Solid Subjects Grouped According to Intelligence (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Best liked solid subject is																		
studied most	16	1	57.2	33	1	68.8	81	1	76.4	12	1	54.5	8	1	80.0	150	1	70.1
studied least	12	2	52.8	15	2	31.2	25	2	23.6	10	2	45.5	2	2	20.0	64	2	29.9
Total	28			48			106			22			10			214		

Table XXXVI

A Comparison of the Frequency with which the Best Liked Solid Subject is Studied Most or Studied Least of All the Solid Subjects Grouped According to Intelligence (Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
Best Liked solid subject is	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Studied most	14	2	45.2	29	1	54.7	77	1	71.3	19	1	76.0	11	1	84.6	150	1	65.2
Studied least	17	1	54.8	24	2	45.3	31	2	28.7	6	2	24.0	2	2	15.4	80	2	34.8
Total	31			53			108			25			13			230		

Table XXXVII combines the data of Tables XXV and XXXVI, and shows that in each group liking for a solid subject was intimately associated with the amount of study. There was a tendency for the dull children to study more frequently than the bright ones, the best-liked subjects. Apparently the dull child finds it more difficult to be driven to the unpleasant task.

Unfortunately the children were not asked to differentiate between solid and non-solid subjects (as to liking). As a result, in a majority of cases, the best-liked subject was not a solid subject. (Gymnasium, which is a non-solid subject, was a great favorite both with boys and with girls.) Since non-solid subjects are not studied outside of the classroom, only the cases, where the best liked subject was one of the three solid subjects, are considered in this portion of the study. Therefore, the number of cases is comparatively low and percentages may be unreliable because of the small number of cases.

Nevertheless, the tendencies revealed in this section are consistent with findings reported previously. There appears to be a tendency for dull children to turn their attention primarily to school work for which they have a distinct liking. This, however, is not the case with the bright children, who devote generous amounts of their time to subject matter for which they have little interest or liking.

Table XXXVII

A Comparison of the Frequency with which the Best Liked Solid Subject is Studied Most or Studied Least Of All the Solid Subjects.

Grouped According to Intelligence (All pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Best liked solid subject is																		
studied most	30	1	50.8	62	1	61.4	158	1	73.8	31	1	65.9	19	1	82.6	300	1	67.4
studied least	29	2	49.2	39	2	38.6	56	2	26.2	16	2	34.1	4	2	17.4	144	2	32.6
Total	59			101			214			47			23			444		

In Tables XXXVIII, XXXIX, and XL, the data show the frequency with which the least-liked solid subject is studied most or least.

Table XXXVIII deals with boys and in each intelligence group, a majority study least their least preferred solid subject; the percentages ranging from 54.1 to 70.0. The 54.1 per cent belongs to the most intelligent group; however the next smallest per cent, 58.3, belongs to the dullest group, while the 70 per cent belongs to group four.

Table XXXIX deals with girls only. In the most intelligent group, exactly half of the girls study most their least-liked solid subject and the other half study it the least. In the two lowest groups, 75 per cent of the cases study least their least-liked subjects.

These data indicate that the brighter girls often deliberately study hard on a disliked subject, while girls, of less mentality do little or nothing with a disliked subject. It appears that high intelligence is a driving force in study. Especially does this condition exist where interest is not found.

Table XL combines the data of the preceding tables. This treatment brings out the facts previously cited and supports the conclusions.

Table XXXVIII

A Comparison of the Frequency with which the

Least Liked Solid Subject is Studied Most or Studied Least

of All the Solid Subjects
Grouped According to Intelligence (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
Least liked solid sub. is	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
studied most	17	2	45.9	14	2	33.3	56	2	36.6	9	2	30.0	10	2	41.7	106	2	37.1
studied least	20	1	54.1	28	1	66.7	97	1	63.4	21	1	70.0	14	1	58.3	180	1	62.9
Total	37			42			153			30			24			286		

Table XXXIX

A Comparison of the Frequency with which the Least Liked Solid Subject is Studied Most or Studied Least of All the Solid Subjects Grouped According to Intelligence (Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Least liked solid subject is																		
studied most	11	1	50.0	20	2	36.3	39	2	35.1	9	2	25.0	5	2	25.0	84	2	34.4
studied least	11	1	50.0	35	1	63.7	72	1	64.9	27	1	75.0	15	1	75.0	160	1	65.6
Total	22			55			111			36			20			244		

Table XL

A Comparison of the Frequency with which the

Least Liked Solid Subject is Studied Most or Studied Least

of All the Solid Subjects
Grouped According to Intelligence (All Pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Least liked solid subject is																		
studied most	28	2	47.5	34	2	35.0	95	2	35.9	18	2	27.3	15	2	34.1	190	2	35.9
studied least	31	1	52.5	63	1	65.0	169	1	64.1	48	1	62.7	29	1	65.9	340	1	64.1
Total	59			97			264			66			44			530		

Tables XLI, XLII, and XLIII deal only with the solid subjects and present data to show the frequency with which each is the most studied subject. These data are assembled by sex, and the pupils are grouped according to intelligence.

Table XLI deals with boys only. Arithmetic was studied most by the four groups, ranking lowest in intelligence. Grammar was studied more than any other subject by the most intelligent group. There was great variation in second and third places among the groups.

Table XLII deals with girls only. Certain things stand out in this table. By a considerable margin, history was studied most by the girls, who are most intelligent; it is in third place among the lowest 75 per cent in intelligence. Arithmetic was in second place with the highest 75 per cent and in first place with the lowest 25 per cent. Among the girls, the the tendency to dislike history was in inverse relationship to to intelligence. Since the girls, of average and of low intelligence, disliked history so much, they studied it least of all their solid subjects. The more intelligent girls, did not dislike history in such large numbers, and probably were able to force themselves to study a disliked subject.

Table XLIII presents data for all pupils. The lower three intelligence groups presented this order for the time spent in study: arithmetic, grammar, and history. Arithmetic wa s first with the second intelligence group. Grammar held first place with the brightest group. In the total column, this order was noted: Arithmetic, 49.5 per cent; grammar, 32.3 per cent: and history, 28.2 per cent. These differences are not significant or reliable.

Table XLI

A Comparison Among the Solid Subjects,

Showing the Frequency with which Each is the

Most Studied Subject, According to

Intelligence Grouping (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Arith	31	2	36.0	56	1	42.4	142	1	42.7	29	1	48.3	22	1	40.7	280	1	42.1
Gram	37	1	43.0	37	3	28.0	107	2	32.1	13	3	21.7	19	2	35.2	213	2	32.0
Hist	18	3	21.0	39	2	29.6	84	3	25.2	18	2	30.0	13	3	24.1	172	3	25.9
Total	86			132			333			60			54			665		

Table XLII

A Comparison Among the Solid Subjects,

Showing the Frequency with which Each is the

Most Studied Subject, According to
Intelligence Grouping (Girls)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Arith	23	2	30.0	37	2	30.6	95	2	34.8	33	1	50.7	24	1	54.5	212	1	36.5
Gram	22	3	28.5	31	3	25.6	101	1	37.0	21	2	32.3	14	2	31.8	189	2	32.6
Hist	32	1	41.5	53	1	43.8	77	3	28.2	11	3	17.0	6	3	13.7	179	3	30.9
Total	77			121			273			65			44			580		

Table XLIII

A Comparison Among the Solid Subjects, Showing the Frequency with which Each is the Most Studied Subject, According to Intelligence Grouping (All Pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentile		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Arith	54	2	33.1	93	1	36.9	237	1	39.1	62	1	49.6	46	1	46.9	492	1	39.5
Gram	59	1	36.2	68	3	28.8	208	2	34.3	34	2	27.2	33	2	33.7	402	2	32.3
Hist	50	3	30.7	92	2	36.3	161	3	26.6	29	3	23.2	19	3	19.3	351	3	28.2
Total	163			253			606			125			98			1245		

The group of tables, which follow, deal with the frequency with which each of the solid subjects is the least-studied subject.

Table XLIV presents data for the boys. The 75 per cent of the boys, who are highest in intellect, studied history the least of all of their solid subjects. Grammar was the least studied subject among the 25 per cent ranking lowest in intellect. History was the second least studied subject in the latter group. Grammar was the second least studied subject among the second and third intelligence groups. Arithmetic was in second place in the most intelligent group.

Table XLV presents similar data for the girls. The girls are more consistent in time spent in study than are the boys. In every group, history was the least studied subject with similar percentages. There was little difference between grammar and arithmetic, Grammar was in second place among the lowest 75 per cent of the girls and in third place among the highest 25 per cent.

The data for boys and girls are combined in Table XLVI. When these data are studied, one finds that history was studied least by the top 75 per cent of the pupils and was in second place among the others. This might have been expected, as history is mainly a reading subject and is mastered readily by the bright pupils. Bright pupils appear to be able to meet easily and quickly the requirement of the teacher.

Table XLIV

A Comparison Among the Solid Subjects,

Showing the Frequency with which Each is the

Least Studied Subject According to

Intelligence Grouping (Boys)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentil		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	45	1	52.3	46	1	38.7	127	1	43.8	17	2	32.1	11	2	31.4	246	1	42.2
Gram	19	3	22.1	39	2	32.8	87	2	30.0	27	1	50.0	17	1	48 .6	189	2	32.4
Arith	22	2	25.6	34	3	28.5	76	3	26.2	9	3	17.0	7	3	20.0	148	3	25.4
Total	86			119			290			53			35			583		

Table XLV

A Comparison Among the Solid Subjects,

Showing the Frequency with which Each is the

Least Studied Subject, According to

Intelligence Grouping (Girls)

	90-100 Percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	26	1	42.7	37	1	36.3	94	1	39.5	20	1	38.4	14	1	42.4	191	1	39.3
Gram	17	3	27.8	32	3	31.4	79	2	33.2	16	2.5	30.8	11	2	33.3	155	2	31.9
Arith	18	2	29.5	33	2	32.3	65	3	27.2	16	2.5	30.8	8	3	24.3	140	3	28.8
Total	61			102			238			52			33			486		

Table XLVI

A Comparison Among the Solid Subjects,

Showing the Frequency with which Each is the

Least Studied Subject, According to

Intelligence Grouping (all pupils)

	90-100 percentiles			75-89 percentiles			25-74 percentiles			10-24 percentiles			0-9 percentiles			Total percentiles		
	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%	cases	rank	%
Hist	71	1	48.3	83	1	37.6	221	1	41.9	37	2	35.2	25	2	36.7	437	1	40.9
Gram	36	3	24.5	71	2	32.1	166	2	31.4	43	1	40.9	28	1	41.2	344	2	32.1
Arith	40	2	27.2	67	3	30.3	141	3	26.7	25	3	23.9	15	3	22.1	288	3	27.0
Total	147			221			528			105			68			1069		

Chapter IV.

Summary and Comments.

Questionnaires were answered by all junior and senior high school pupils in Kansas City, Missouri. From the questionnaires, the cards of all seventh grade pupils were selected for careful study. The answers to the following questions were tabulated: 1. What subject do you like best? 2. Why? 3. What subject do you like least? 4. Why? 5. What solid subject do you study most? 6. What solid subject do you study least? Then from office records, the teachers' marks and intelligence ratings of the seventh grade pupils were recorded and tabulated. The children were assembled in five groups according to intelligence.

The writer proposed to answer the following questions:

1. What are the five subjects liked best by these 1286 seventh grade junior high school pupils, and what are the five most frequently reported reasons for the preferences?

2. What are the five subjects liked least by these pupils and what are the most frequently reported reasons for these dislikes?

3. Do these pupils make grades in their best-liked subjects which are superior to or inferior to their average grades?

4. Do these pupils make grades in their least-liked subjects which are superior to or inferior to their average grades?

5. What is the frequency with which these pupils study most or study least their best-liked subject or their least-liked subject?

6. What is the frequency with which each solid subject is studied most and studied least?

7. What is the effect of sex upon the above questions?

8. What is the effect of differences in mental ability upon the foregoing questions?

The most popular subject among boys was gymnasium. In popularity it was followed by history then shop, next arithmetic, and finally grammar. At each of the five levels of intelligence, gymnasium was best-liked by more pupils than was any other type of school work. History was the second most popular subject. Grammar was seldom well-liked by the boys and there was scarcely any difference among the intelligence groups in this attitude.

Among the boys, it appears that intelligence, as measured by the National Intelligence Test, has little bearing upon the liking for subjects. Shop (which is often thought to be a favorite among boys of low intellect) ranked higher with the boys of high intellect than those of low intelligence. It was liked better by the highest ten per cent of the boys, than by the lowest ten per cent. The top group and the middle group liked shop equally well.

In the composite ranking of the girls, grammar was the most popular subject, followed by arithmetic, gymnasium, and history. This ranking varied from one intelligence group to another. Among the ten per cent of highest intelligence, history had second place and arithmetic was last. With the lowest ten per cent, in intelligence, gymnasium had first place, grammar fell to third, and history was in fifth place. History grew steadily less popular as the intelligence diminished.

The data show that among the boys, the subjects were unpopular in this order: grammar, history, arithmetic, art, and music. In each intelligence group, grammar was most un-

popular, but by varying percentages. History and arithmetic were strikingly similar in frequency of unpopularity.

The girls presented this order of disliked subjects: history, arithmetic, grammar, art, and music. The most intelligent group differed considerably from this composite order. Among the members of this high group, history and arithmetic reversed positions. History was more and more disliked as intelligence decreased. Art and music were not the least-liked subjects of any girl in the least intelligent group.

When pupils were asked to give reasons for liking a subject or for disliking one, their replies could be classified into a few groups. The general statement "I like it" was given by about 50 per cent both of boys and of girls. A similar statement "I don't like it" was given by about one-third of the boys and the girls as the reason for not liking a subject. About one-fifth, both of boys and of girls, did not report why they disliked a subject and about one-tenth of them did not report why they liked a subject. One must assume that these seventh grade children, either do not know why they like or dislike subjects, or that they do not introspect in regard to their attitudes. Possibly in some cases, the children did not believe it wise to state their real reason, especially if the reason might involve the personality of the teacher. Teachers distributed the questionnaires.

Of course many children did give reasons for their attitudes. Among the boys, the reasons for liking follow in order of merit: It is useful, I can succeed in it, I like the teacher. There was little difference among the five intelligence groups in the frequencies with which these reasons were given. Girls placed success in the subject ahead of usefulness, and liking the teacher ahead of not knowing why they liked a subject. No striking differences appeared among the groups assembled according to intelligence. Success in the subject was given by so few of the least intelligent girls as to place that reason in fourth place. One would have supposed that this reason might have influenced such girls greatly in their liking a subject.

Lack of success in the subject was the most common reason given by the boys for not liking a subject. It ranked ahead of the statement "I don't like it". This was true of each intelligence group, except the highest one. Of course, the highest group of boys had little difficulty in securing a reasonable mastery of any subject, and therefore most frequently would give the statement "I don't like it". One might assume that the least intelligent boys would question the utility of a subject. The data, however, show no boy in either of the lowest groups gave this reason for disliking a subject.

The girls followed the same order as did the boys in giving reasons for disliking subjects. The same order was found at each intelligence level, but percentages, of course,

varied.

One would expect to find a pupil receiving a grade in his best-liked subject that was above his average grade and a grade in his least-liked subject that was below his average grade. The data bear out these expectations both among the girls and the boys. This is true also for every intelligence group. A large percentage of boys of low intelligence made grades above their average in their best-liked subjects, and grades below their general average in their least-liked subjects. One might assume that intelligence acted to drive the more intelligent to work at a distasteful task and that the less intelligent work better and more successfully when the task is pleasant. The highest percentage of girls, who made low grades in their disliked subjects, was found in the group of least intelligence. One would have expected to find that this same group would have the highest percentage who made above average grades in their best-liked subjects. However the most intelligent group had the highest percentage who made above average grades in the best-liked subjects.

One would anticipate that the best-liked subject would be studied most and the least-liked subject would be studied least. Since only solid subjects are studied outside of the class-room, use could be made only of the cases where the best-liked or the least-liked subject was one of the three solid subjects: history, grammar, or arithmetic. These

three subjects are required of all seventh grade pupils. In each intelligence group, among the boys, the best-liked solid subject was studied most. Among the girls, all except the most intelligent girls studied most on their best-liked solid subject. Perhaps the intelligence of the group drove them to work harder on some subject other than their best-liked solid subject.

Among both boys and girls, a majority of each intelligence group studied least their least-liked solid subject. With one exception, the frequency of study decreased as the intelligence decreased. That exception was in the least intelligent group of boys where almost half of the boys studied most on their least-liked solid subject. The possible explanation is that the size of the low group was small and therefore not representative. Otherwise the data seem to justify the assumption that bright boys and girls tend to study intensely and frequently least-liked subjects. High intelligence appears to force more study where interest is not found.

The last item taken up in the study was to discover which solid subject was studied most and which one was studied least. Among all pupils, most time was given to subjects in this order: arithmetic, grammar, and history. This was true both among boys and among girls. Slight differences appeared in the several groups assembled according to intelligence. Grammar was studied most by boys of highest intelligence. Among the girls, history was studied most often by the most

intelligent, grammar by the middle group, and arithmetic by the lowest group.

Over half of the boys, in the highest group, studied history the least, and history was also the least-studied subject of the boys in the second and third groups. Among the two lowest groups, grammar was studied least. History was least-studied among all groups of girls. The entire group of boys showed this order among the solid subjects: history, grammar, and arithmetic. The girls showed the same order as did the boys, and the percentages are strikingly similar.

One explanation is that little written work is required in the preparation of history lessons, and more is required in grammar, and much more in arithmetic. Many pupils do only the minimum amount of work to pass, and therefore one would expect the above results.

Comments.

These comments apply only to seventh grade junior high school pupils of Kansas City, Missouri.

Great differences appear between the sexes in the liking for subjects and in the disliking for subjects. There is little difference among the boys at different intelligence levels in the preference for subjects or in the dislike for them. There is slightly more difference among girls of different mental abilities than among the boys.

Seventh grade pupils either do not know in many cases why they like or dislike subjects, or do not introspect suf-

ficiently in regard to their attitudes to give reliable reasons.

Best-liked subjects are studied most and least-liked subjects are studied least both by boys and by girls. Among both boys and girls, this tendency increased as intelligence decreased.

These pupils tended to receive grades in their best-liked subjects which were above their average grades, and to receive grades in their least-liked subjects which were below their average grades. This tendency, with each sex, increased as mental ability decreased.

In the introduction to this thesis, Gates, Thorndike, Dewey, and others were quoted concerning the above facts. Gates, following Thorndike, states that the individual tends to repeat and learn quickly those reactions which are accompanied or followed by a satisfying state of affairs. The individual tends not to repeat or learn quickly those reactions which are accompanied or followed by an annoying state of affairs. Thorndike states that interest and ability are bound closely together. Dewey says that the principle of interest is the principle of recognizing the identity of the fact to be learned with the growing self. When this condition of identification is secured, we do not need to appeal to the will nor to occupy ourselves with making things interesting.

While the liking for a subject or the dislike for one affects greatly the amount of study which the pupil exhibits, another factor enters into the amount of study. This is the amount of definite preparation that is demanded by the teacher.

In general these data support the theories set forth by

Dewey, Kilpatrick, and Thorndike. Interest and its corollary, liking for a subject, appear to add appreciably to efficiency in school work. Lack of interest and consequently dislike for subjects decrease efficiency of pupils in school endeavor. These facts are reflected clearly in the data presented in this thesis.

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